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THE CAPE YORK IRONSTONE.

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There is always a peculiar interest attaching to those strange bodies, meteors, which, issuing out of the infinite abyss of universal space, fall upon the earth with loud detonations, accompanied by flashes or trails of brilliant light. When one of these visitors from far off space happens to be a mass of pure soft iron, apparently heaven-sent to supply one of the most indispensable needs of the most northerly human beings on the globe—a tribe of isolated Arctic aborigines numbering only a little over two hundred souls literally ice-imprisoned in the gloomy depths beyond the Arctic Circle—and when the existence of such a mass has been a matter of historic or legendary knowledge since the discovery of the tribe over three-quarters of a century ago, while its precise location has been unknown, the interest is increased tenfold.

Such is the interest attaching to the meteor ironstone of Cape York, which for unknown years furnished the

ancestors of the Arctic Highlanders with the iron for their knives in return for the simple labor of clipping off fragments from the main mass.

On the 9th of August, 1818, Capt. Jno. Ross, R.N., imprisoned with his two ships, the *Isabella* and *Alexander*, in the Arctic ice-pack off the desolate northern shore of Melville Bay, some twenty-five or thirty miles to the eastward of Cape York, was "surprised by the appearance of several men on the ice . . . . drawn on rudely fashioned sledges by dogs, which they continued to drive backwards and forwards with wonderful rapidity."*

After a great deal of manœuvring, for a detailed account of which see Ross's original narrative of his voyage, communication was established with these individuals of a hitherto unknown tribe of Hyperboreans, and they were induced to come on board the ships.

Among the scanty possessions of these natives were crude bone knives with cutting edges of iron. The discovery of this metal in the hands of these isolated aborigines, who had never seen white men before, and had no idea of the existence of human beings beyond their own tribe, naturally excited comment. It was supposed that the metal had been obtained from some fragments of wreckage, and Ross's armourer thought the knives were made from pieces of iron hoop or flattened nails. A little later, however, it was understood from the natives that the iron was procured from a mountain near the shore, and that they cut off it with

* Voyage of Discovery, &c., &c., by Jno. Ross, Capt. R.N., London, 1819—4to, page 80.

a sharp stone the pieces from which the blades of their knives were made.

The further references to this metal I give in Ross's own words:

"He (a native) was now interrogated respecting the iron with which his knife was edged, and informed us that it was found in the mountain before mentioned; that it was in several large masses, of which one in particular, which was harder than the rest, was a part of the mountain; that the others were in large pieces above ground, and not of so hard a nature; that they cut it off with a hard stone, and then beat it flat into pieces of the size of a sixpence, but of an oval shape. . . . the place where this metal was found, which is called Sowallick, was at least twenty-five miles distant" . . . (Ross's Narrative, p. 104).

Ross endeavored by the promise of large rewards to have the natives bring him specimens of this iron, but without success. He did, however, obtain a specimen of the stone which the natives used for the purpose of cutting off the iron from the rock. This stone appeared to be a basalt and was obtained from Inmallick, a headland to the northward (Ross's Narrative, p. 112). Of the metal Ross says:

"The most important mineral production of this country is the iron already described, which is found only at Sowallick or the Iron Mountains. The circumstances attending this have already been described; and it is now only necessary to add that it has been examined by Dr. Wollaston and found to contain nickel; and that it is probably of meteoric origin, since all the masses hitherto found in different places, which are equally attributed to this, are distinguished by that peculiarity" (Ross's Narrative, pp. 117–118).

The Arctic voyagers who succeeded Ross in this portion of the Arctic regions make no mention of this iron, and when, in 1875, the Arctic Committee of the Royal Society, acting by authority of the Lords Commissioners of the Admiralty, prepared for the use of the English Polar Expedition the Manual of the Natural History, Geology, and Physics of Greenland and the

neighboring regions, which contained presumably a complete summary of existing knowledge on those subjects to that date, we find in it on pp. 324–327 the following information in regard to this stone or stones:

(9.) The Iron mentioned above, under "Cape York," is stated by Capt. Ross to have been used by the "Arctic Highlanders" of Prince-Regent's Bay (lat. 75° 54′, long. 65° 53′), for the edges of their knives, and to have been obtained by them from the mountains near the coast, behind Bushnan Island. It was said by the natives, as interpreted by Sacheuse, to occur in several large masses or pieces, of which one in particular, harder than the rest, was part of the mountain. The iron was cut off with a hard stone, and then beaten into small, flat oval pieces. The place where the metal was found was called "Sowallick," and about 25 miles inland (lat. 76° 12′ N., long. 53° W.). This iron Dr. Wollaston estimated to contain between 3 and 4 *per cent.* of *nickel* and Mr. Fyfe found in it 2.56 *per cent.* Hence, they regarded it as of *meteoric origin. Op. cit.*, vol. i., p. 132, p. 140, and vol. ii., pp. 181–6.

XLI.—Notes on Meteoric Iron used by the Esquimaux of the Arctic Highlands. By Captain (now General Sir) Edward Sabine, R.A., F.R.S., &c., &c. 1819.

1. "Quarterly Journal of Literature, Science, etc.," 1819, vol. vi., p. 369, and "Geological Magazine," vol. ix., p. 74, 1872.

"The northern Esquimaux, lately visited by Captain Ross (in August, 1818), were observed to employ a variety of implements of iron; and upon inquiry being made concerning its source by Captain Sabine, he ascertained that it was procured from the mountains about 30 miles from the coast. The natives described the existence of two large masses containing it. The one was represented as being nearly pure iron, and they had been unable to do more than detach small fragments of it. The other, they say, was a stone, of which they could break fragments, which contain small globules of iron, and which they hammered out between two stones, and thus formed them into flat pieces about the size of half a sixpence, and which, let into a bone handle, side by side, form the edges of their knives. It immediately occurred to Captain Sabine that this might be meteoric iron; but the subject was not further attended to till specimens of the knives reached Sir Joseph Banks, by whose desire Mr. Brande examined the iron, and he found in it more than 3 per cent. of nickel. This, with uncommon appearance of the metal, which was perfectly free from rust, and had the peculiar silvery whiteness of meteoric iron, puts the source of the specimens alluded to out of all doubt. The one mass is probably entirely iron, and too hard and intractable for further management; the other appears to be a meteoric stone containing pieces of iron, which they had succeeded in removing and extending upon a stone anvil."

2. Extract from "An Account of the Esquimaux who inhabit the West Coast of Greenland above the Lat. 76." By Capt. Edward Sabine, R.A., F.R.S., F.L.S.

"Quarterly Journal of Literature, Science, etc.," vol. vii., 1819, pp. 72–94. *See also* the "Geological Magazine," vol. ix., 1872, pp. 73–74.

"Each of the Esquimaux who visited us on the 10th of August (1818), and I believe each of the others whom we after saw, had a rude instrument answering the purpose of a knife. The handle is of bone, from 10 to 12 inches long, shaped like the handle of a clasped knife; in a groove which is run along the edge are inserted several bits of flattened iron, in number from three to seven in different knives, and occupying generally half the length. No contrivance was applied to fasten any of these pieces to the handle, except the one at the point, which was generally two-edged and was rudely riveted. In answer to our inquiries from whence they obtained the iron, it was at first understood that they had found it on the shore; and it was supposed to be the hooping of casks, which might have been accidentally drifted on the land. We were surprised, however, in observing the facility with which they were induced to part with their knives; it is true, indeed, that they received far better instruments in exchange, but they did not appear to attach that value which we should have expected to iron so accidentally procured. This produced some discussion in the gun-room, when it appeared that some of the officers who had been present in the cabin when the Esquimaux were questioned were not satisfied that Zaccheus' ('Sacheuse,' of Captain Ross's Narrative, 1819) interpretation had been rightly understood; he was accordingly sent for afresh, and told that it was desired to know what had been said about the iron of the knives (one of which was on the table), and he was left to tell his story without interruption or help. He said it was not English or Danish, but Esquimaux iron; that it was got from two large stones on a hill near a part of the coast which we had lately passed, and which was now in sight; the stones were very hard; that small pieces were knocked off from them, and beaten flat between other stones. He repeated this account two or three times, so that no doubt remained of his meaning. In reply to other questions, we gathered from him that he had never heard of such stones in South Greenland; that the Esquimaux had said they knew of no others but these two; that the iron breaks off from the stone just in the state we saw it, and was beaten flat without being heated. Our subsequent visitors confirmed the above account, and added one curious circumstance—that the stones are not alike, one being altogether iron, and so hard and difficult to break that their supply is obtained entirely from the other, which is composed principally of a hard and dark rock; and by breaking it they get small pieces of iron out, which they beat as we see them. One of the men, being asked to describe the size of each of the stones, made a motion with his hands conveying the impression of a cube of two feet, and added that it would go through the skylight of the cabin, which was rather larger. The hill is in about 76° 10′ lat., and 64° ¾′ long.; it is called by the natives 'Sowilic,' derived from 'sowic,' the name for iron amongst these people, as well as amongst the South-Greenlander (*sic*). Zaccheus told me this word originally signified a hard black stone, of which the Esquimaux made knives before the Danes introduced iron amongst them; and that iron received the same name for being used

for the same purpose. I suppose that the Northern Esquimaux have applied it in a similar manner to the iron which they have thus accidentally found.

"We are informed in the account of Captain Cook's Third Voyage that the inhabitants of Norton Sound, which is in the immediate neighborhood of Behring's Straits, call the iron which they procure from Russians 'shawic,' which is evidently the same word. The peculiar colour of these pieces of iron, their softness and freedom from rust, strengthened the probability that they were of meteoric origin, which has since been proved by analysis."

When turning over in my mind the project for my 1891–92 Expedition to Whale Sound the discovery of this stone was naturally one of the minor attractions of this region, and during the winter at Redcliffe House I obtained from the natives considerable information in regard to the stone. I learned that it had been visited by many of the present generation of the natives, and made a bargain with one of the young men of the tribe to give him a gun if he would guide me to the stone when my party returned southward.

The lateness of the season, thick weather and the presence of much ice when the "Kite" steamed southward past Cape York rendered any delay inadvisable, so that the attempt to locate the stone was abandoned for the time.

Again in 1893–94 the discovery of this stone had its place in the schedule of the work which I hoped to accomplish, and when on the 1st of August, '93, my ship, the "Falcon," dropped anchor inside of Cape York, after the quickest passage on record through Melville Bay (24 hrs. 50 min.), and from the summit of Cape York itself I saw the coast to the eastward in the reputed locality of the stone apparently free of heavy ice, I hesitated some time before deciding that it was hardly advisable to risk any delay to, or interference

with, the main object of my expedition by taking the "Falcon" out of her course.

The mishaps to my inland-ice party and its enforced return to headquarters in the latter part of April, 1894, gave me, at last, the opportunity to make a special trip for the discovery of the meteor stone; and at 9 A.M. Wednesday, May 16, Lee and I left Anniversary Lodge in search of it, with the iron runner sledge and ten dogs.

Our travelling costumes consisted of a suit of underwear, with deerskin ahteahs, or hooded shirts, worn with the fur inside; fur trousers (my own of dogskin, Lee's of deerskin), with the fur worn outside; kamicks, or native sealskin boots, with woollen stockings and fur inner soles; and a pair, each, of woollen and fur mittens.

Upon the sledge was our sleeping gear, consisting of a deerskin kooletah, or hooded fur coat, and a pair of long fur stockings for each. The kooletahs were never worn during the trip, but used simply as a cushion or mattress on which to sleep.

In addition to these articles the sledge load comprised two weeks' rations and one week's reserve rations for contingencies, R.R. compass and tripod, Kodak camera, rifles and ammunition, snowshoes, and a pair of ski to be attached to the sledge in the event of our encountering very soft snow. Among the possibilities of the trip was a return over the inland-ice cap from C. York, or the Iron Mountain, to some point in Olrik's Bay, either as a matter of choice in the event of pleasant weather and a rapid down trip, or, as a matter of compulsion, in the event of breaking up of the sea ice between Cape York and Wolstenholm Sound before we were ready to return.

Behind the sledge trailed the new odometer constructed by Entrikin from barrel heads, playfully known by the boys as "the locomotive," and warranted to stand all shocks from the ice or a following sledge.

It was a glittering wintry day with fresh south wind and abundant cumuli casting cloud shadows on the white expanse of the bay and distant ice caps, the temperature 25 deg. F.

The snow on the bay ice was so deep and soft that but one of us could ride at a time, the other going ahead to encourage the team.

It was my desire to do more or less surveying work on this trip, so on leaving the Lodge our course was directed to my cairn on South Point. From the South Point we crossed the mouth of Bowdoin Bay to the Castle Cliffs, the eastern headlands of the Bay, passing on the way numerous seals basking in the sunshine on the ice.

At Castle Cliffs, on the ice foot under the lee of a great sandstone boulder, we found the tupics, or sealskin tents, of Panickpah and Koolootingwah. Panickpah was to be our driver from here on, and, while I climbed up the rocks for a round of angles from the cairn at this point, he brought out his kooletah and extra kamicks and lashed them on the sledge while Lee untangled the dogs.

From Castle Cliffs we drove as the crow flies straight across the gulf to Tigerachomy Point, the angle in the coast-line between the mouths of Olrik's and Academy Bays. Here another cairn was built and a round of angles taken, and this work completed, we kept on southwestward along the shore towards Olrik's Bay. The

greater portion of a freshly killed seal, left on the ice by some native who had just preceded us, gave my dogs a substantial repast. At half an hour before midnight we reached the now deserted village of Narksami. This village is situated in a westward-facing cove fronting Herbert Island and walled by steeply sloping mountains. The habitations numbered four: stone igloos built against a bank just above high-water, and just south of the boulder-strewn delta of the great kook (river) from the ice-cap. Here we stopped to mend the sledge and prepare supper, which was cooked on an open fire-place in front of the igloos with seal blubber for fuel. This repast of seal meat, brown bread, pea soup and tea finished, we started on, and at 4 A.M. arrived at the northern point of Olrik's Bay. Here, perched on sheltered shelves of the rocks, we found three tupics. In niches in the pudding-stone ledge were several fire-places, and on the ice-foot two seals and numerous pieces of blubber and walrus meat. We were travelling in the season of sunshine and plenty. The big clean tupic of Ootooniah was vacant, he and his wife being away visiting, and this offered such a good opportunity for undisturbed sleep after our nineteen hours' march, that we immediately availed ourselves of it and turned in.

Eight or nine hours of refreshing sleep put us in trim for the next day's work, and we pushed across the mouth of Olrik's Bay to Ittiblu, where we found four tupics occupied by about twice as many families.

Among the natives at this place were our friends Ootooniocksoah and Assayuh with their wives, also Ahwotah, the native with the wooden leg (mentioned

by Hall). Stopping but a short time at this place, we pushed on along the south shore toward Netchilumi. We had not proceeded more than three or four miles on our way when we were overtaken by two sledges. These turnouts were so entirely different from each other that they are worthy of notice. One was a family conveyance, a large sledge, upon which was piled the tupic, with all the hunting gear and household gods of the family, until the load was so high that it had been necessary to lash on a board to serve as an intermediate step by which to reach the top. Perched upon this sat Ootooniocksoah with his wife Ahkatah and his four or five-year old boy Teddyling-wah. This load was drawn by seven small dogs, which were straining every muscle under the persuasive influence of Ootooniocksoah's twenty-foot rawhide lash that played on and about them with reports like a volley from a seven-shooter.

A striking contrast, the other sledge; Nupsah, out on a seal hunt, with three powerful, brawny dogs, and nothing on his sledge but his seal chair. The former turnout reminded me of those family picnic wagons, so many of which may be seen entering Fairmount Park on Sunday morning; the latter; of a bachelor, in his sulky, speeding a favorite pacer.

As the sledges kept along, side by side, Ahwotah, loquacious, as always, and anxious to be entertaining, pointed out to me an old igloo nearly buried beneath the falling fragments of a glacier, and said that it used to be occupied, but that the occupants had been driven away within her memory by the approach of the glacier. At another place a vein of soapstone, used

by the natives in the construction of their ikkimers or lamps, and kooloosoos or kettles, was pointed out. Five o'clock in the morning found us at Netchilumi after a twelve hours' march, in a fine clear, sunny night; though the snow banners were hung out all along the summits of the cliffs, and whenever we stopped, and the rattle of the sledges ceased, we could hear the ominous roaring of the wind aloft.

At Netchilumi we occupied the tupic of one-eyed Merktoshar and his kindly wife, Ahma. Their tupic offered the advantage of being pitched on the ice of the bay, away from the filth and offal which surrounded the tupics of the village; of being free of children and having a bed of clean fresh deerskins.

I found at this village a large number of natives assembled, filling to the utmost the seven tupics, besides that of Merktoshar and two igloos.

Some of these natives had been attracted here by the abundance of seals, while others were only on their way to Cape York.

There was more of an air of spring here than at the Lodge or any place that we had seen on our way.

The ground about the village and the slopes back of it were free of snow, except in detached banks, and during several hours of the day water could be obtained from streams trickling down these banks.

Hayes, in speaking of Barden Bay, in which this village of Netchilumi is located, distinctly refers to three glaciers, which, however, are not indicated on the charts. There seems to have been a very decided change in these glaciers since the time of his visit. The Tyndall Glacier, which he describes as presenting

a coast-line of ice over two miles long, is at present not over half that width. The small glacier to the right which at that time was "barely touching the water" is now pronouncedly in the water, while the third at the head of the Bay, which then "was yet miles away from the sea," has now pushed one corner nearly if not quite to high-water line.

Among the natives here was Tallekoteah, who at Redcliffe, two years ago, had acted as my mail-carrier, taking letters to Cape York to deliver to a whaler. He had fulfilled this mission faithfully, as my letters had reached their destination after my own return home, and Tallekoteah now delivered to me a brief note from Capt. Allen of the "Terra Nova," dated June 6, '92, acknowledging the receipt of my mail.

This man was thoroughly conversant with the region about Cape York, having lived there several seasons, and professed to be well acquainted with the location of the ironstones, which he said he had seen repeatedly. He told me that there were three, of varying sizes, the smallest about the size of a mikkie (dog) indicating a dog curled up, the second considerably larger, and the third still larger than the second.

He also said that one of them was neither very high above the water level nor very far from the water, while the other two were up on the side of the mountain. After a good deal of talk and considerable hesitation on his part, he agreed to go with us to Cape York and guide me to the stones.

He would take his own sledge and four dogs, and for the consideration of a knife I obtained from Ahngeeniah five more fine animals, so that I had sixteen dogs in

all, three of my original team having been given to Panickpah to enable him to get back home

These arrangements perfected, I turned in for a sleep, and when I awoke shortly before midnight I found the population of the village very materially decreased, five families having left with all their belongings for Cape York via Kangahsuk (Cape Parry).

At 1 A.M. of the nineteenth we left Netchilumi, Tallekoteah and myself on one sledge drawn by ten dogs, Lee following with the second sledge drawn by six. The midnight hours were gloomy and overcast, but this did not trouble us as long as fresh dogs and snow-free ice permitted us to dash at full gallop westward for Cape Parry, the black promontory which stands guard at the southern entrance of Whale Sound.

Three hours later we rounded the cape into the teeth of a driving snowstorm, whose fast falling flakes hid everything from our eyes but did not keep from our ears the sound of waves and the puffing of narwhal in the open water close to our right. A few miles south of Cape Parry, the violence of the storm had reached such a pitch that we could make no headway against it, and we sought the opportune shelter of an igloo, which Tallekoteah had excavated in a snow bank, during his upward trip from Cape York some weeks previous. This igloo was in a badly dilapidated condition, but was speedily repaired by Tallekoteah after he had constructed a wall of snowblocks to shelter him from the blinding drift. Then the dogs were secured to the ice foot, our sleeping gear and provisions were speedily passed in and freed from the damp snow, we followed and the entrance was closed

with neatly fitting snowblocks, and we were secure from the further violence of the storm.

Tallekoteah started a fire on the end of an empty tin box and melted water for our tea, filling the igloo with the stickiest of smoke and soot in the process.

In these contracted quarters we remained some twenty hours when a loose dog walking over the roof of our shelter brought the whole thing down upon us and drove us out into the storm, which had fortunately abated somewhat at this time. A glance at the ruins decided me to attempt to push on. We found the snow deep and heavy and underlaid with several inches of slush. Through this the dogs could scarcely drag the sledges alone, and riding was for us entirely out of the question.

Off Bell Rock, the summit of which looked down on us for a few moments through the mist and snow, Tallekoteah shot a seal, the less desirable portions of which furnished the dogs with an acceptable repast, while the choicer cuts were reserved for ourselves. Just below the entrance to Booth Sound we found five tupics pitched a little above the ice foot, the five families who left Netchilumi before us awaiting the cessation of the storm in order to continue their journey.

Almost with our arrival the work of striking these tupics was commenced, and we stopped only long enough to have Tawanah's wife, Nelleekah, cook our seal meat, off which we made a hearty meal and then pushed on again. It was still snowing, the travelling grew constantly heavier and heavier and the ice was intersected by cracks which, masked by the deep snow, allowed us to step into them without warning, and kept us wet constantly to the hips. We passed the site of

the winter hut of the boat-party from the "Advance" in 1854, and a little farther on a snow igloo and tupic, the occupants of which immediately gathered up their belongings and joined our caravan.

All this time my driver had been singing a little song of the deep, deep snow at Cape York, much deeper than here, which would cover the ironstones and make it impossible for us to find them; of the wide, wide Inaks (leads in the ice), much wider than any we had yet seen, which must be crossed before we reached Cape York, and into which we probably would fall and be drowned; of the almost certain breaking up of the ice before we returned, so that we could only come back in the ship, and also of the pain in his legs which would be sure to attack him if he was compelled to travel through deep snow. He was evidently very sick of his bargain, but I silenced him temporarily by telling him that I would at least visit the site of the stones now, and then, if necessary, find them from the ship later on.

At 3 P.M. we came up to open water, impinging directly against the shore, and, crossing the ice foot on a shaky bridge of floating ice cakes, we reached the snow-covered shore and followed it to the N. point of Wolstenholm Sound, the "land of Noogli" and the neighborhood of the Ignimut or firestone of the natives. Stopping here, my driver led me a long wild-goose chase across country to the face of a big glacier, and after various wanderings pointed to a huge snow-drift as the site of the stone. I told him he was an unmitigated fraud, and we returned to the sledge. Several other sledges had come up by this time and two or three tupics were already going up. My driver now told me that he in-

tended to return to Nitchilumi afoot, but that I could retain his sledge and dogs, and take one of the natives from here to go with me.

Lee began melting water for our tea over an open fire-place, while I made arrangements with Angodeblacho for us to sleep in his tupic and have him accompany me on the morrow as my guide and driver. Hardly had these arrangements been completed when Tallekoteah returned, saying he would keep on with me. His little game of bluff had failed completely. There were hundreds of male eiders in the water off the shore and numbers of little auks and burgomaster and kittiwake gulls flying over it. After several hours sleep in the crowded tupic of Angodeblacho, occupied by himself, another man, his wife, and two besides Lee and myself, I turned out and, with Angodeblacho as guide, made another attempt to find the ignimut. The same thick weather wrapt the dark mountains in a shroud, the same black water, canopied by sullen blue-black clouds, reached away from the shore.

Angodeblacho indicated nearly the same place as had Tallekoteah and dug away considerable snow but did not succeed in finding the stone. As well as I could judge, the ignimut or pyrites is not a detached boulder, but a nodule bedded in the face of a vertical rock escarpment. When we returned to the camp the tupics were all struck and the sledges packed. Leaving the point, we went along the shore a short distance, then descended into the slush-covered, crack-intersected ice of the Sound inside the open water. Some distance out several seals were seen and Kyutah with my rifle obtained one after crawling within twenty yards of it.

When we reached the three little islands which lie off the north shore of the Sound, we stopped to skin and cut up the seal. I selected the choice parts and some of the blubber for my share and we then hastened on leaving the Eskimo caravan, comprising some thirty-five individuals and fifty dogs, to dispose of the seal. Our course was directed through the fog across the Sound towards Saunders Island, which after a few hours was faintly visible ; then the sun broke through a rift in the clouds and the island with its regularly banded cliffs loomed up before us like a huge carnelian. Before we reached it a fresh south wind began to whirl the white drift over the surface of the bay and into our faces, and we sought shelter in a niche in the rocks forming its southeastern shore. Three sledges overtook us just as we arrived here and their occupants immediately began building a combination tupic igloo, erecting a low snow wall and throwing over this the folded tupics. While this was being done Lee and myself were enjoying a luxurious repast of seal steaks and tea cooked over a fire-place in a small cave in the rocks.

We obtained here six and a half hours' sleep and started for Cape Athol at 2 in the afternoon.

The travelling was fair, though the strong southeast wind still forced the drift into our faces. At 6 P.M. we came upon open water off Cape Athol, a broad lead reaching from the cape clear across to Saunders Island. After a single glance at this lead my driver whirled his team round and started at full speed for Nachsarsami to cross overland to the ice south of the open water. Following up the valley of the great "kook" at the mouth of which the village is situated, we climbed to

the snow-covered interior plateau some thousand feet above the sea level, then southward across this plateau about 6 miles to another valley, descending which, we came out on the sea ice again in a little cove about five miles north of Petowick Glacier. While crossing this plateau we saw seven deer, one of which was shot by Tallekoteah. The sea ice now was smooth and free of snow and we swept at good speed along the wild shore cliffs, past the rookeries of little auks, past the contorted sides of Mt. Agony to a cave close beside the Petowick Glacier, perhaps the very one in which Kane hauled up his boats. This cave is a regularly arched grotto in the solid gneissose rock, at or just above high-water mark. It is about 20 feet high and wide at the entrance and 20 feet deep, but only 5 feet high at the inner end. There is a still smaller extension of the cave back into the rocks which is used by the natives as a cache, the entrance being closed by loose stones.

Above the mouth of the cave the cliff rises vertically for hundreds of feet and on either side a projecting buttress shields the mouth of the cave completely from the wind. This cave is a well-known and favorite half-way house of the natives in their travels along this coast, and at its inner end we found a quantity of dried grass forming a bed, and a well blackened fireplace with remains of seals and birds.

After a "grand gorge," as Lee expressed it, of venison steaks, liver and bacon, seal meat, pea soup, tea and corn bread, we stretched ourselves on the rocks in this shelter and slept soundly. While we slept the sun shone in warmly, but by the time we had finished breakfast and were ready to start, our usual

companion, bad weather, was on hand to accompany us, and we left the cave in a driving snow squall. The blue-green wall of the great Petowick Glacier, projecting far out from the shore, compelled us to make a long detour seaward, and we soon encountered, in the shape of a broad lead or lane of water, a premonition of the obstacles that lay before us.

Some time was spent in discovering a practicable place for crossing and, once over, we found beyond many other leads, and a dreary expanse of deeply slush-covered and, in places, rotten ice. My driver proceeded with the greatest reluctance and at last confessed to his fear of the ice, which he said was very thin and at the least wind would be broken up and floated out into the north water, the ominous blue-black loom of which was close at hand, we now being several miles off the face of the glacier. As it was now, however, just as far to retreat as to advance, I flattered him a little, telling him he was too big and too brave a man to turn back, and insisted on proceeding, which we did.

The slush and leads continued, and the wet and heavy travelling, combined with the haunting fear that we might strike an impassable lead, rendered the hours extremely trying to me. At last we were able to head in towards the shore south of the glacier, and, ferrying across two broad leads on cakes of ice, we finally reached Cape Dudley Digges. In crossing the last lead the odometer caught in the ice and was twisted out of shape.

From the cape a broad outward-curving lead stretched clear across the unnamed bay, which I will call Parker Snow Bay, between the cape and Parker Snow Point,

and drove us nearly out to Conical Rock into an interminable network of leads caused by the strong tidal action between the rock and the shore.

At length we gained the shore ice a few miles south of Conical Rock and from here on we were troubled by no more leads. Deep snow, however, in front of each of the numerous glaciers, which pour their icy currents through every break in the Crimson Cliffs, retarded our progress, and at last, thoroughly tired and sleepy with the nervous tension of the day, I directed Tallekoteah, when about 15 miles from Cape York, to run the sledge ashore beside a big rock for a few hours' rest. We had been thirteen and a half hours on the march. Along the entire shore from Petowick to where we stopped the cliffs were alive with countless millions of little auks, and numerous loons, kittiwake gulls, burgomasters and Greenland falcons. One re-entrant angle in the cliffs was colonized on one side by loons and on the other by kittiwake gulls and little auks, the former occupying the lower floor. Perched on every available rock and ledge, like swarms of insects or clouds of dust on the snow, the number of atoms of life was inconceivable. Falling asleep here immediately, Lee and Tallekoteah behind the rock and myself on the sledge, the moments passed unheeded and unintentionally we wasted 8½ hours. Again under way, with fairly decent going except in front of the glaciers, we reached the Cape York tupics, 4 in number, at 3 in the morning. During the entire journey from the cave to Cape York we obtained only occasional glimpses of the summits of the cliffs through the fog and driving snow squalls. I had told Tallekoteah before reaching

Cape York that I wished to sleep in a tupic which was clean, and roomy, and not crowded with children, so I was immediately shown to the habitation of Tahweenyah, the oldest and most influential man of the village.

Here, after a supper of tea, bread and boiled seal meat, Lee and myself turned in for a comfortable sleep, while the wind whistled and the snow beat against our skin shelter on a low rock point of this wild Arctic promontory, facing southward across the icy, bear-haunted wastes of Melville Bay. At last we had reached "Imnaminomen" (Cape York) after ten days of struggle with the difficulties of Arctic spring travelling, but even now the outlook was not encouraging for a termination of our troubles, and there was every probability that we might be storm-bound here for several days.

Fifteen hours later, the storm had abated sufficiently for us to leave the tupic and we went around an angle of the shore to the "pooto" (hole), where a natural bridge connects an outlying buttress with the main cliffs. Just over the arch of this natural bridge is a falcon's nest, and a few feet above it a raven's, while in the sheltered angle of the buttress we found another tupic and in full blast several fire-places, over which the inhabitants of the settlement were doing their cooking. Several seals lay on the ice foot, trophies of the hunt, and every niche in the rocks out of reach of the dogs had its store of little auks, which the natives were catching in large numbers and on which they were now feasting to repletion.

Long lines of the skins of these birds were stretched drying from rock to rock, later on to be made up into

the universal ahteah or birdskin shirt worn by every native. At every tupic were pieces of bearskin, several of these animals having been killed here this spring.

In the shelter of the "pooto" Lee went to work to cook our supply of meat for the trip to the Iron Mountain, while I set Tallekoteah to lashing the skin on the bottoms of his sledge runners in preparation for the deep snow which the natives said was everywhere to the eastward of the Cape. While this work was in progress the force of the storm increased again so as to put the idea of further progress at present entirely out of the question; so, after another of Lee's "grand gorges," we returned to Tahweenyah's tupic to await as patiently as possible the cessation of the storm. It seemed as if the fates were against me in everything, with only one pleasant day since leaving the Lodge and the hardest of travelling the entire way. This was, however, the expiring effort of the storm; a few hours later it began clearing, and having left in charge of Tahweenyah everything that we would not absolutely need for a three days' trip, and, with all sixteen of our dogs attached to Tallekoteah's sledge, we entered upon the last stage of our journey.

Skirting along the shore, we passed round the south-east point of Cape York, with its numerous deserted igloos, to the village beside the glacier where the "Falcon" stopped last Summer. Here we found one family, which either from inherent laziness or lack of a tupic, were still occupying their damp and dilapidated igloo. From this point our course lay straight across the bay to the islands on the eastern side, where there were said to be four igloos, and where we thought

to find my old acquaintance "little" Kessuh, the same youth that I had expected would be my guide two years ago. The snow was very deep, and Lee and myself were compelled to take turns in snowshoeing ahead of the dogs. This gave us little concern, however, as the sun was now shining brightly and there was every prospect of a brilliantly clear night before us. The entire circuit of this bay, which is certainly large enough to deserve a name on the charts, from the Eskimo village which we had just left round to the islands ahead of us, is a glacier face broken by a few nunataks. Arrived at the island igloos, we found them deserted, but a fresh sledge track led from them round the end of the island, and following this we soon came to a cave in the rocks, and in the cave was our little friend, fast asleep upon a luxurious bed of bearskins, with a deer skin thrown over him.

The habitation of this young bachelor was so unique that it merits some description. Just outside the cave was his sledge, just within the entrance his dogs were fastened, then came his bed with his gun leaning against the rocks at his head. A niche in the rocks, some four feet above the floor, formed his fire-place, and in the inner extension of the cave, behind his head, were the carcasses of four or five seals, more bear skins, some bear meat, several birds, his harpoon, lines and other belongings. As he said to me, he had no "koona" (wife) to make him a tupic, so he was obliged to find a ready-made one. He jumped at the opportunity of accompanying us, and in a few moments was dressed and had his dogs fastened to his sledge. Six of my dogs were added to his four. Lee got on the

sledge with him, and with this arrangement of loads, fresh dogs and hard snow, we left the cave at a gallop, which speed was kept up past the outer island and eastward along the shore till after midnight, when we reached the western point of the double-armed bay, running into the land north of Bushnan Island. There is another island not shown on the charts, lying across the mouth of this bay inside of Bushnan, and passing inside of this, we headed for the eastern arm of the bay.

By this time, under the influence of the clear, cold night, the snow had become firm enough, so that we were able to discard the ski from the runners, and this, with the numerous seals on the ice, kept the dogs in a constant state of excitement and at their utmost speed. Kessuh succeeded in shooting one seal, which gave the dogs a good feed and provided for our dinner.

At 4.15 in the morning we had reached the head of the bay, the dogs were fast to the ice foot, and Tallekoteah and myself were climbing over it in search of the ironstone.

After passing some five hundred yards up a narrow valley, Tallekoteah began looking about until a bit of blue trap rock, projecting above the snow, caught his eye. Kicking aside the snow he exposed more pieces, saying this was a pile of the stones used in pounding fragments from the ironstone. He then indicated a spot four or five feet distant as the location of the long-sought stone. Returning to the sledge for the saw-knife, he began excavating the snow and at last, after digging a pit some three feet deep and five feet in diameter, just at 5.30 Sunday morning, May 27th,

the great brown heaven-born stone, rudely awakened from its winter's sleep, found for the first time in its cycles of existence the eyes of a white man gazing upon it.

I kept Tallekoteah at work enlarging the pit and excavating about the stone until Lee and Kessuh arrived, when he was relieved by the latter. In addition to the thick blanket of snow, the stone was completely covered with a half-inch thick coating of ice. The work of excavation satisfactorily completed, I spent the remainder of the perfect, cloudless day of Sunday until 4 o'clock in the afternoon, in measuring, sketching and photographing the stone and taking angles for a rough map of the vicinity, and then descended to the sledge for a little needed sleep.

Approach to, Site of, and Description of, the Ironstone.

Some twenty-five miles s.,e. ¾ s. (mag.) from Cape York is a bold auk-inhabited headland, to the eastward of which a double-armed bay stretches northeastward to the icy background of this snow-clad coast. Two islands, one large and one small, guard the mouth of this bay. The left or westerly arm of this bay is comparatively broad and terminates in a long glacier face, the western wall of this arm running far into the ice cap from the glacier face, and ending in a wild, black cliff. The entire western shore is apparently a continuous sheet of glaciated snow. The easterly arm is not so deep, is separated from the other by the bold black auk-haunted bluff of Akpudi, and ends three miles be-

yond this point in a little rectangular cove, walled by a series of hills 300 to 500 feet high. This wall is continuous everywhere, except at the eastern angle of the cove, where a gently-sloping narrow valley opens. Proceeding up this for a few hundred yards, one finds that it is an isthmus, separating the bay already mentioned from a glacier bay to the eastward. The isthmus is perhaps eighty feet high at its highest point, and just east of this on the southern slope of the mountain to the north, lies the famous ironstone, one hundred and thirteen feet above sea level, and 450 yards from the shore line of the bay.

Partly bedded in the ground, the big brown mass slopes southward, with the slope of the hill on which it rests. Standing beside it the eye roams southward over the broken ice masses of Glacier Bay to the distant haunts of the Polar bear; eastward across the glacier itself, to the ebon faces of the Black Twins, two great ice-capped cliffs which frown down upon the glacier; and southwestward over the placid surface of Saviksoah Bay, which offers such a striking contrast to the berg chaos on the opposite side of the isthmus. Seen from above, the stone is of an irregular rounded trapezoidal shape, with a circumference of eleven feet, a maximum length of four feet and three inches, and a maximum width of three feet and three inches. The highest part of the stone above ground is fifteen inches. Its average thickness is perhaps one to one and a half feet, but difficult to determine at this season. The weight is probably not less than 5,500 lbs., and perhaps double that, depending upon the penetration of the stone into the earth. Its surface is dark-brown rust

color, interspersed with small greenish pits. The stone is apparently a mass of pure iron, with no admixture of grit or any other foreign substance. It can be easily cut with a knife, and wherever scraped with knife or file presents a bright silvery lustre. It is surrounded and partly covered by numerous fragments of fine-grained blue trap, portions of wave-worn boulders and cobbles, brought here by the natives on their sledges from along the shore at and south of Cape Athol, for the purpose of detaching scales of the metal. All the other rock of the vicinity is gneissose.

Tallekoteah tells me that the Innuits call the stone a woman in a sitting position, and says it used to be much larger and higher than it is now, but that his people have gradually worn it down, and that years ago natives from Peterahwick broke off the head and carried it away. He also voluntarily told how the ancient knives of his people used to be made, namely, by inserting several flattened pieces in a bone or ivory back; and then with a piece of trap lying near showed me how the flakes of iron were detached. Nothing could be more interesting than this re-enacting of this ancient practice.

I scratched a rough "P" on the surface of the metal as an indisputable proof of my having found the stone, in case I should not be able, later on, to reach it with my ship, and built a small cairn upon the top of a big gneissose boulder 112 yards distant, in which I placed the following brief record:

SUNDAY, May 27, 1894.

"This record is deposited to show that on the above date R. E. Peary, U. S. Navy, and Hugh J. Lee, of the

North Greenland Expedition of 1893–94, with Tallekoteah, an Eskimo guide, discovered the famous Iron Stone, first mentioned by Capt. Ross, and have carefully examined the same."

"(Signed) R. E. Peary, U. S. N.,
Comd'g Expedition."

Then after a last look at the celestial straggler, I descended to the sledge where Lee had already preceded me, and, stretching myself upon it, immediately fell asleep. Two hours later I awoke to find the entire sky overcast and a chill wind blowing up the bay. The weather demon had given us just one perfect day in which to learn the secret of the meteor stone, and was now resuming his baleful sway.

Supper, breakfast or dinner, just as one chooses to call it, over, the dogs were hitched up and we started to locate the second meteor stone, which my guide told me was on the large island at the entrance of the bay. Passing at a good pace down the bay, we soon reached the approximate site of this second ironstone, some seven miles distant on the eastern end of the island.

Two hours or more were spent in the search for the stone, a search that was rendered fruitless by the great depth of snow that had been drifted in here by the southeasterly winds, completely obliterating all the minor topography of the island.

The stone was described to me as being firmly imbedded in the ground, which is here entirely free from other stones, and the portion projecting above ground is represented as from five to eight feet long, two to four feet wide, and one and a half to three feet high.

My guides also persisted in the statement that it was precisely like the other, and that the natives had not used this one for making knives because the other was more convenient. Before leaving the island, Talleko-teah pointed out to me a headland to the eastward, somewhere in the rear of which he said was the third ironstone. He, however, had not seen this stone, nor could he name any native that had. Its existence was, however, a matter of general knowledge among the natives.

At midnight we started on our return to Cape York. The eastern horizon was by this time black with a rapidly advancing snow storm, which overtook us about 2 A.M. This snow storm was remarkable for its great variety of crystals, hardly two of which seemed alike, and I noticed two forms that I do not remember to have seen figured or described.

At 4 A.M. we were back at Kessuh's cave again, and after a hearty meal we left the fearless young bachelor curled up once more on his bear-skin couch and started across the Bay for Cape York.

The now heavily-falling snow clogged the sledge more and more, and it was 12.30 P.M. of Monday when we once more reached the friendly tupic of Tah-ween-yah, myself hungry for sleep, of which I had had two hours in the last fifty.

Thirty-six hours later, at midnight of Tuesday, the storm had cleared away, cærulean blue sky hung over the black cape, beyond the shadow of which the ice-bergs gleamed yellow in the brilliant sunlight, and we were heading northward through the deep snow, our faces turned homeward. Our host, Tah-ween-yah, and

our friend, Koko, accompanied us with their sledges and dogs, bound up the coast after guillemots. Riding was not to be thought of, as the dogs could barely haul the sledges alone, so we had strapped on our snowshoes for a long and heavy day's work. Every indication pointed to a long and weary struggle homeward, yet I had the sustaining thought that I had, in spite of all obstacles and drawbacks, accomplished the object of my trip. At the end of fourteen and one-half hours of perfect weather and hip-wrenching toil through the snow we halted at the base of Karkarsoak, twenty miles from the tupics, and hauled our sledges up over the ice foot to the shelter of a big rock. Dinner finished, I was in a few minutes asleep on my sledge and Lee on his.

A few hours later I awoke to find it blowing a gale, the air full of snow, and the three Eskimos just commencing to excavate a shelter in the big drift round the corner of the rock. I curled myself up with back to the wind for another nap, while this work was progressing. When Tallekoteah woke me to tell me the igloo was finished I was covered with snow. My Eskimos had made a first-class job of their house building, having excavated a comfortable three-room igloo in the face of the big drift. The outside door (?) led to the central compartment, which Tallekoteah informed me was for himself and Tah-ween-yah ; the compartment to the left of this, and connected with it by an arched opening, was for Lee and myself, while the one on the right, similarly connected, was for Koko, who had pushed his sledge into it, intending to use it for a bed. Everything having been brought inside by

my faithful companions, and the dogs carefully secured, the entrance was closed up with blocks of snow, except a little hole at the top, and, spreading our kooletahs and a dogskin on the floor of our compartment, Lee and myself resumed our interrupted slumbers. All Wednesday night, Thursday, Thursday night and into Friday morning the storm howled and roared along the wild cliffs and among the bergs, though no faintest murmur reached us in our deeply buried cavern. As the drift increased over us, the little opening to the outer world was kept clear with a walrus lance, and when this became too short, with two lashed together. At length, late Friday forenoon, Koko set to work, with saw-knife and feet, to dig out, and when his tunnel to the outer air was complete, its length at the bottom was not far from eighteen feet. The wind and snow had nearly ceased, and in a short time the clouds began to clear away, and our eyes were gladdened by the sight of Conical Rock, fifteen miles distant. After attending to the dogs, the two natives climbed up the slope a hundred feet or so above the igloo with their nets, and within half an hour had captured between one and two hundred little auks, which they brought down to the igloo and skinned and cleaned with the greatest rapidity and dexterity. The plump, firm breasts of these birds furnished us the material for a very enjoyable meal, and the refuse gave our dogs a good feed. When we again got under way I was glad to find that the strong wind had improved the travelling so that we could ride, until we reached the Heilprin, or Cavern Glacier. Here, for a mile or two, we were compelled to wade through deep slush

in front of the glacier. At midnight we reached the loon-frequented cliffs, some three or four miles north of the glacier, and stopped about an hour to obtain a few birds. Here we parted company with our two travelling companions, who were to stay here for a day or two.

Two or three miles farther north we turned into a little break in the cliffs, just south of Conical Rock, and began an arduous overland climb to avoid the *inaks* or leads. A narrow winding cañon, its bottom filled with deep soft snow, led steeply up from the head of this height, till at a distance of a mile and a half from the shore it was closed by a nearly vertical curtain-like drift, the crest of which rose 1,050 feet above sea level. After climbing at a snail's pace and with frequent stops to the foot of this drift, it became necessary to carry the greater portion of the sledge loads on our backs, over the crest, and then to push and pull the sledges up the slope, step by step, after the struggling and half-buried dogs. Once over the crest of the drift, the ascent, though steep, was easier, and a rise of 700 feet more in a distance of, perhaps, two miles, brought us to the summit from which we could look directly down upon the glacier, which descends to Parker Snow Bay and over the entire country to the northward as far as Wolstenholm and Saunders Islands.

The morning was perfectly calm and clear, and I went a short distance to the left of our course to a somewhat higher spot, to obtain some photographs.

The little Parker Snow Bay lay spread out below me, its shape and extension into the land fully shown; beyond it, over a stretch of gently rolling nearly snow-

free country, the river-like Petowick Glacier swept straight as an arrow and with full banks from the distant ice cap to the sea. Beyond this again, more rolling country with deep snowdrifts in the valleys extended to distant Nachsarsami and the southern shore of Wolstenholm Sound.

Off Wolstenholm Island, the blue-black ribbon of the north water was plainly discernible. Our course now lay down the surface of the glacier, and our descent was a very different matter from our ascent. Seating myself on the sledge behind Tallekoteah, in a moment we were whirling down the steep slope of the glacier, and half an hour later were bouncing over the ice foot of the bay, five or six miles distant.

It was now 7.30 A. M., the meridian of the Arctic morning, and the surface of the bay was one blinding glare of light, in which several seals were basking, and through which came to our ears the hum of the billions of seabirds on the opposite cliffs.

The *inaks* or leads, which with the glass I had seen at the mouth of the bay from the highest point on our overland trip, had decided my driver to strike overland again from the head of the bay, so we laid our course for its northeastern angle, where there are two igloos. Some distance short of the shore, however, we came upon the fresh tracks of two sledges going towards the entrance of the bay, and the sight of these made my driver change his mind at once, and in a moment we were whirling along nearly at right angles to our former course. When the bird cliffs were reached, we found still more sledge tracks and still fresher signs of natives, so that every moment I expected to see the tupic of

some of the families, who had started south with us, pitched at the foot of the cliffs. In this, however, I was disappointed, only a cave which had been used as a camping place being found. The *inaks* near the mouth of the bay we were able to cross after a little reconnoitring, and at 10.30 the last one was conquered, and we rounded Cape Dudley Digges.

At 11 A. M., we camped on the southern side of the little bight, which makes in along the side of the Petowick Glacier. I use the word "camped" to express the simple operation of fastening the dogs to the ice foot and building a fire on the rocks, the day being so warm that we could sleep without shelter.

Directly opposite was the blue wall of the glacier, which we must cross, and which was the last obstacle between us and decent going.

After a good dinner of boiled loons, bread and tea we turned in, and at 9.20 P.M. of Saturday, after some five or six hours of sleep, we resumed our march for the head of the bight, which was reached in half an hour, crossing a bear track on the way.

From the head of the bight we climbed up a snow-filled ravine which, trending at first eastward, gradually swung to the north and at an elevation of 750 feet gave us a fine view of the glacier. A rapid descent brought us down to the glacier edge, which was reached at 10.45 P.M.

The place where we ascended the side of the glacier was five or six miles above its face and our course lay diagonally down and across it to the point where its northern edge breaks through the shore cliffs. For about a mile the surface of the glacier consisted of low

rounded séracs and shallow depressions, then gradually became smooth and unbroken like the inland ice throughout the remainder of its width.

As we galloped rapidly over this firm, slightly descending surface, I was strongly impressed with the advantages this glacier offers for the study of glacial characteristics in this latitude.

These advantages are, its length of twelve to twenty-five miles, its width of six to seven miles rectilineal course, nearly uniform slope, down what was once a deep fjord, and its unobstructed debouchment into the open sea, all of which tend to eliminate temporary minor and local causes, affecting the motion and physique of the ice stream and to render data obtained from it typical for this latitude.

Added to these advantages are the accessibility of the glacier, the smoothness of its surface and the feasibility of establishing camp directly upon it.

While crossing the glacier, ominous white wind clouds were rapidly whirling up from the southeast over the ice cap, and as we reached its northern edge the vanguard of the gale overtook us. Descending the northern side of the glacier at a place which no one but an Eskimo would attempt, where Lee with his sledge and team went down, rolling over and over before landing in a confused heap, we reached the little sheltered cove beside the glacier, and emerging from this we were at the cave where we had slept on our downward trip.

To my agreeable surprise we found the ice here perfectly smooth, high winds having swept it entirely free of snow, and this, with the strong wind which was

now rapidly increasing behind, enabled us to keep up a good speed, the sledge at times even running upon the heels of the dogs. A few miles beyond the cave we came upon the solitary tupic of Tautcha, pitched at the mouth of a narrow gorge. From him we learned that Kyo and another Eskimo were located in their tupics a few miles further up the shore. These tupics we reached a little before 3 A.M., the wind blowing a gale, the clouds and fog rapidly drifting in from the southward; here I obtained a number of little auks from the natives and then began our next overland journey, the trail leading up a narrow ravine.

There was no doubt but that the weather aloft was as bad as could be desired, but Tallekoteah claimed to know every step of the way thoroughly and I had confidence in what he said.

The mouth of the ravine is just south of the Red Mountain of my sketches, and a few miles south of the ravine from which we emerged on our downward trip. A few miles from the shore it opens up on the interior plateau. At five in the morning, having reached an elevation of 1,050 feet, we began to descend, and, going at a rapid pace portions of the way, with the dogs dragging behind the sledge, we reached Nachsarsami at 7 P. M.

During this entire overland march we had been enveloped in the clouds and lashed by a southeast gale. When we arrived at Nachsarsami the clouds had descended to the sea level, enveloping everything in their dense folds. Three tupics stood in line near the shore, which I soon found to belong to Ootooniacksoah, Annowkah, and Angodeblacho. I chose the latter

in which to sleep, the owner being out after a recently killed walrus.

Late in the afternoon the wind decreased and the clouds gradually lifted, and we began what proved to be the longest and most wearying march of the trip. As we started, the base of Saunders Island was visible. From Nachsarsami to the peculiar eastern point of Saunders Island the travelling was heavy, the sledge breaking through the top crust into the slush beneath; from here to the north shore of the Sound the travelling improved, partly because of the advancing night and partly on account of the fresh northeast wind, both tending to harden the snow.

As we passed along under the wonderfully regularly banded cliffs of Saunders Island, I could not help being again struck by their appearance, reminding me very forcibly of the towering numerous-storied free-stone hotels or apartment houses of some of our great cities.

When well out into the Sound the sun broke through the clouds, but the wind increased rather than the reverse, a glittering silver ribbon gradually crept along the profile of the ice cap between Granville Bay and Whale Sound, and an ominous snow banner was unfurled from the summit of the black rock Poo-een-yah, ahead of us. All this, as I knew by previous experience, meant furious drift aloft, and led me to give up the intention which I had of making the overland cut between Granville and Olrik's bays. The open water had eaten its way much farther into the bay since our downward trip and compelled us to pass inside of the E-ly small island. Six o'clock in the morning found us

at the land of Noogli just in front of the Ignimut Glacier. Here I made another fortunately successful attempt to find the "Ignimut" and obtained several specimens.

It is a pyrites cropping out in several veins on the face of a limestone escarpment, some twenty-five to thirty feet high (deep drift at base prevents accurate estimate), and seems to be confined to a space of about ten feet in length of the escarpment.

My specimens obtained, we pushed ahead over the low strip of foreshore which lies at the foot of the cliffs from the north side of Wolstenholm Sound to Cape Parry; past the great rock Poo-een-yah, from the foot of which we looked down upon the turquoise-blue north water dotted with gleaming bergs and far-off Carey Island; past the north arm of the Ignimut Glacier; past the site of the house of the boat party from the "Advance," now deeply buried in snow, and so on up to Booth Sound and the wonderful Bell Rock, which we reached at 8.45 A. M. All this time, though the sun was shining brightly, the wind blew in furious squalls, whirling the snow in our faces in blinding sheets. Lee being some distance behind me, we waited here under the rock for him to come up.

Bell Rock is a very symmetrical formation when seen either from the southeastern or seaward sides, but less so when seen from the east. The base consists of loose clay shale, dipping slightly to the west. The shale is about 30 feet out of the water at the eastern end and presents a vertical wall to the water; from this base the Rock itself rises to a height of 900 to 1,000 feet. The shape of the rock with the talus at its base very closely resem-

bles that of a bell. The talus extends somewhat more than half way to the summit, and up to the top of the talus it is horizontally stratified. This stratification is not noticeable except on the northern side, where the disintegration of the rock has been less rapid and the talus is less extensive. Above the talus the rock is a mass of homogeneous granite, apparently with perpendicular sides, the top possibly accessible at one place, a cleft on the eastern side. There is an extensive layer of fossil clam shells in the eastern end of the base, some 30 feet above high water, and covered with about a foot of earth, etc. Along the side of the Island the water was trickling down the banks.

Leaving the rock, the wind seemed to increase in violence, coming directly down off the glacier which fills the north arm of Booth Sound, and it was with difficulty that the dogs could be driven against it.

Open water at Cape Parry necessitated our going overland to Netchilumi from Booth Sound, and our course lay over this glacier right in the teeth of the gale. The lee of the glacier face offered a grateful temporary shelter, and then we commenced the ascent of the lateral gorge along the south side of the glacier.

Confined in this gorge, the wind repeatedly nearly swept us from our feet. At one steep descent the sledge had to be lowered stern foremost, and when at last we scaled the glacier side to its surface, it was in much the same way that flies crawl up a wall. The surface of this glacier rises with a gradual slope straight away to the ice-cap domes overlooking Barden Bay, 3,362 feet above sea level.

It was four in the afternoon when we reached the

summit of one of these domes, and looked down into the bay at our feet and out over the outer expanse of Whale Sound and its triple islands. The climb from Booth Sound to this point, some 10–15 miles, was one of the most fatiguing that I have made in Greenland. The comparatively steep and unvarying ascent, the character of the snow, yielding at every step, the furious and incessant wind and drift right in our faces, and the long time that we had been on the march, combined to make the climb a serious one. The direct descent from where we stood to the lower portion of the Tyndall Glacier was a nearly vertical ice slope, surcharged upon a vertical cliff, and we were forced to make a detour southward to the more practicable slopes at the glacier head. After travelling some few miles in this direction we seated ourselves upon the sledges for one of the grandest and most exhilarating of toboggan slides.

The start was from a grand ice dome, more than 3,000 feet above the sea, the toboggan slide on the serpentine icy slope of the great Tyndall Glacier. The toboggan, one of the clippers of the new fleet of sledges built since the advent of the Peary expeditions, was a sledge 8 feet long, 20 inches wide, 7 inches high, shod with tusks of the walrus, and fastened with the thongs of the seal and walrus; the toboggan steerer, fur-clad Tallekoteah, with his matted black hair flying back from his face.

Seated, both of us, astride the sledge, with heels pressed into the snow, almost in an instant after we started the dogs were trailing in a confused mass behind the sledge, the ablest ones at full gallop, to

keep up with the sledge, the others dragged by their traces, whirling and tumbling over and over in a cloud of flying snow.

Fans of blinding snow flew backward from our vibrating feet, and so mile after mile we dashed down our cyclopean toboggan shute, the great red brown rock buttresses enclosing it, rich and warm with the glowing sunlight, whirling past us with dizzying rapidity.

The bay ice below rose rapidly to meet us, two or three bergs imprisoned in it grew, as grows the locomotive of the lightning express when thundering straight at one at a speed of 60 miles per hour, the islands sank to the horizon, the ice domes in our rear disappeared behind the slope of the glacier, and at last, veering sharply to the left into the snow-filled gorge beside the glacier, to avoid the crevasses in its lower portion, we reached the level of the bay, breathless, with clothing snow-filled, and our dogs animated snowballs. Half an hour later we were at Netchilumi, the centre of an admiring group of natives, and my dusky driver was restored again to the arms of his anxious Ah-wah-ting-nah.

I repaired at once to the roomy and cleanly tupic of one-eyed Mocktoshah and his faithful old wife, Ahmah, still located on the ice by itself. Here, stretched upon the bed of clean fresh deer skins, the floor of the tupic in front of the bed, the translucent blue bay ice, I gave myself up to the luxury of a chill, induced by my diet of walrus meat and the over-exertion of the day. My eyes, too, were in a bad way from the blinding sun and beating drift.

At 1.40 P.M. the next day we got under way for the Lodge, Tallekoteah, with his wife and daughter, and all his and his son's dogs, going with me on his big sledge, while Ooblooah, his son, drove Lee's team of six, the two dogs that got loose on the ice cap having come in during the night. Kyutah and family also accompanied us.

What with my smarting eyes and disordered stomach, I took but little interest in the first part of the trip, being only too glad that I was able to ride all the time.

All the afternoon we crept along the shore to Ittiblu, then across Olrik's Bay past Nocksahmy to Tigarach-ahmy, which we reached at 4 A.M., Wednesday, June 6. 9 A.M. found us at the Castle Cliffs, and at 2 P.M. we reached the Lodge.